

Abstract of the Disclosure

One embodiment of the present invention is an electron microscope that includes: (a) a main vacuum chamber housing a stage therein and connected to a vacuum pump; (b) a load lock for loading a specimen into said main vacuum chamber; (c) a
5 minicolumn non-translatably positioned inside said main chamber; and (d) a vacuum pump situated inside the main vacuum chamber and external to and connected to the minicolumn.